U.S. DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL WEATHER SERVICE
Silver Spring, Md. 20910

MEMORANDUM FOR: All NWS Regional Headquarters, Regional Maintenance Specialists, Electronic Systems Analysts, and Electronics Technicians [Engineering Handbook (EHB)-13, Series II distribution]

FROM: W/OPS1 - Acting, Mark Paese

? Mark Paese
Signature Not Verified

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Date: 2002.10.22 05:55:39 -05'00'

SUBJECT: Transmittal Memorandum for EHB-13 Series II, Issuance 02-26

1. Material Transmitted:

Engineering Handbook No. 13 Series II, Advanced Weather Interactive Processing System (AWIPS), section 5.1, AWIPS System Modification Note 4, AWIPS Linux Communications Processor (CP) Replacement and Waveswitch 1216 High Speed Local Area Network (LAN) Upgrade.

2. Summary:

AWIPS System Modification Note 4 provides high speed local area network hardware installation and AWIPS CP replacement instructions.

3. Effect on Other Instructions:

None. File this note in EHB-13, Series II, Section 5.1.

AWIPS SYSTEM MODIFICATION NOTE 4, REV A (for Electronic Systems Analysts)
Maintenance Logistics & Acquisition Division
W/OPS1: FJZ

SUBJECT : AWIPS Linux Communications Processor (CP) Replacement and Waveswitch 1216 High Speed Local Area Network (LAN) Upgrade

PURPOSE : To provide hardware installation procedures for two Linux CPs and high speed Local Area Network (LAN) equipment.

AUTHORIZATION : The authority for this patch modification note is Request for Change AA321

EQUIPMENT AFFECTED : Advanced Weather Interactive Processing System (AWIPS) HP 743RT based Satellite Broadcast Network (SBN) CPs at sites listed in attachment B.

SITES AFFECTED : All AWIPS sites. For sites with WaveSwitch 1216.

PARTS REQUIRED : Northrop Grumman Information Technology, Inc [(NGIT) formerly PRC] will ship all required parts to the sites. Sites will receive 3 boxes.

MODIFICATION PROCUREMENT : None

TOOLS REQUIRED : Standard site tool kit, anti-static mat, table (on which to set CPSBN1 and 2), and electrostatic discharge (ESD) strap, and a long #2 phillips screwdriver.

TEST EQUIPMENT REQUIRED : None

EFFECT ON OTHER: INSTRUCTIONS None. File this note in EHB-13, Series II, section 5.1.

VERIFICATION STATEMENT : This modification was tested at the National Weather Service Headquarters NMTW, Silver Spring, MD (SLVM2), Southern Region Headquarters (EHU), Western Region Headquarters (VHU), WFO Portland, OR (PQR), and WFO Pendleton, OR (PDT).

TIME REQUIRED 6 hours

TECHNICAL SUPPORT : For questions or problems regarding these installation instructions please contact Franz J.G. Zichy at 301-713-1833 x128. For any other questions, please contact the NCF at 301-713-9344**.**

GENERAL

The increase in throughput of AWIPS operational data, has identified performance problems in older AWIPS components. The CPs are recognized as one of the limiting factors and are replaced by Dell 2550, 2U high rack mounted servers. Because the Dell 2550 server is deeper than the current CP, minor repositioning of rack components is necessary. The CP characteristics are:

Hardware:

- Pentium III, clocked at 1 Ghz
- 256MB RAM
- 4 x 18 GB SCSI Hard Drive in RAID-0 configuration (disk striping)
- on-board SCSI controller
- 3.5" floppy drive
- 24x IDE CD-ROM
- 19" Rack mount kit
- single 10/100BaseT NIC
- single 330W power supplies
- PTI board wanXL400 PCI EIA-530 adapter w/EIA 530 cable

The HSL components include:

- 100 Mbps PlainTree WaveSwitch LAN Module
- 10/100/1000 Mbps HP Procurve Ethernet LAN switch

Service: Once full deployment is complete, replacement CPs are ordered through CLS and hardware repair will be handled through the NRC. The CP hardware will be covered by a 90 Linuxcare Service agreement (managed by the NRC), providing 4 hour response (5x10) parts and labor, and on-site (Kansas City Depot) hardware maintenance for 3 years.

Software: NGIT will install the disk image containing Red Hat operating system (OS) version 7.0, device drivers, and AWIPS specific user accounts and disk partitions. The CP runs the AWIPS Communications Processor software. The disk image described above will support the scripted installation of version 5.1.2 of the AWIPS CP software.

NOTE:

1. Only sites with Waveswitch 1216 should use this procedure. Sites with Waveswitch 100, refer to AWIPS Modification Note 5.

2. If a site receives the Comms Processor field modification kit (FMK) with only one Waveswitch 1216 100Base-TX card, install the card in Waveswitch 1 and wait for the second 100Base-TX card to arrive from NGIT in approximately 2 months. Configure the second Waveswitch as follows: Connect the LA1AW45 (NWS5114) cable from port 24 on the 2nd HP Procurve to any available 10Base-T port on the 2nd Waveswitch.

NOTE: **Installation Guidelines**

- ESAs are asked to schedule the communications processor (CP) installations with their AWIPS regional focal points
- AWIPS regional focal points are asked to coordinate the CP installation using Netscape calendar set aside for AWIPS software upgrades The attached document provides instructions on how to access:

  http://calendar.netscape.com
- NCF/NGIT upgrade support is available from 7AM to 7PM EDT, Monday through Thursday.
- OCONUS sites requiring installation assistance outside the set support hours on Thursdays must coordinate with the NCF a day in advance.
- A maximum number of 5 sites per day will be upgraded in the AWIPS time-frame noted above.
- Review the complete modification note before performing the installation.
- If any of the installation instructions require further clarification, call the NCF.
- Sites must coordinate the CP installation with their regional or NCEP Center AWIPS focal point. COMT, the Training Center, systems at WSH, and the OSF should schedule their upgrade with franz.zichy@noaa.gov at WSH or schedule themselves using the calendar feature on Netscape set aside for AWIPS software upgrades.

PROCEDURE

The CP hardware kit is sent by NGIT in 3 boxes. The boxes will contain two Dell 2550, 2U high rack mounted servers and rails, two 10/100 Switch2, two Waveswitch 100Base-TX modules, cables, labels, and other supporting supplies. The LAN upgrade and CP installations are performed by the site ESA using the procedures outlined below.

A. AWIPS SB Rack Preparation Procedure

To minimize data loss, the HP communications processors are removed from the rack, placed on a table, but are not disconnected. Removal of the rack doors may facilitate maintenance. **Call the NCF before performing these instructions.** Read each step **thoroughly** before performing a procedure. Follow the procedures outlined below.

1. Prepare a table with a proper surface and height to place the 2 communications processors (CP).

2. From the back of the SB rack, identify the CP cables and cut the tie wraps to allow adequate cable length when the CPs are pulled out of the rack.

3. From the front of the CP rack, use 2 people to carefully pull CP2 out, release rail locks and pull the CP off the rails on to the table (figure 1).

4. Repeat for CP1 and place it on the table on top of CP2.

5. Remove the CPSBN slide rails from the rack.

6. Remove the power strips (and mounting hardware) from the rack and lay them aside. Except for the rack fan, **do not** unplug any of the devices from the power strip.

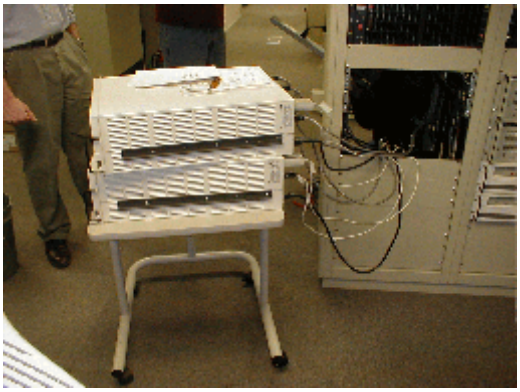

Figure 1

Figure 2

7. Install horizontal power strip #1, so that the receptacles face toward the rear of the rack, the top of the power strip is aligned with the top of the **upper rear vertical mounting rails**, and the power switch is on the right (figure 2). **RFCs may have to install the power strip directly below the 2nd router slide rail.** Plug Demod1, Demod2, (except for collocated sites) and the rack fan into receptacle one, two, and six (counting from left to right), run the power strip cord down the right side of the rack and plug into the floor receptacle (data loss of 1 minute maximum).

Figure 3

8. Remove the mounting hardware that attaches the lower shelf to the rear vertical rack rails. Do not remove the front part of the shelf. The capture nut and rack screws will be reused to reattach the shelf to the rear vertical rail.

9. Remove the lower rear vertical mounting rails from the rack (figure 3). Tilt the back end of the shelf down to gain better access to bottom part of the rear rails.

Figure 4

10. Relocate the rack rail capture nuts forward to the 27th hole (approximately 14 inches) from the rear of the rack, along the center and bottom side braces (figure 4).

11. Reinstall the lower rear vertical mounting rails in the new location. Insure the rails are at the forward most limit of the adjustment slots. The rail must be at its forward most limit to provide clearance for the alignment pin on the new CPSBN slide rails.

12. Install horizontal power strip #2 to the lower vertical mounting rails with the power strip's top mounting holes aligned with the **27th hole (approximately 16-inches)** from the bottom of the rail and with the power switch on the right (figure 5).

Figure 5

13. Install the last power strip (#3) below power strip #2, leaving 3 holes (1.75-inches) between the bottom of #2 and the top of #3 (figure 5).

14. Using the capture nut and rack screws removed earlier, reattach the lower shelf to the rear vertical rack rails. The capture nut will be located over either the 3rd or the 11th hole from the bottom of the vertical rail depending on the current shelf position.

15. Run the power cords of both power strips down the right side of the rack. Plug power strip #1 and power strip #2 into the same circuit used by the left side vertical power strip. Plug power strip #3 into the circuit used by the right side vertical power strip.

This completes the AWIPS SB rack preparation procedure.

B. New CPSBN Equipment Installation Procedure

1. Install CPSBN1 slide rails by inserting the alignment pins of the front and rear mounting plates in the 43rd hole from the bottom of the vertical mounting rails [measured approximately 26 ½ inches up (figure 6 and 7)]. Note difference between left and right rails (figure 8). Right rails are pictured in figure 6. Insert the alignment pins in the front and rear mounting platesl (using 2 people may facilitate installation). Secure the slide rails to the vertical rail into the top and bottom holes of the rail (figure 9).

Figure 6

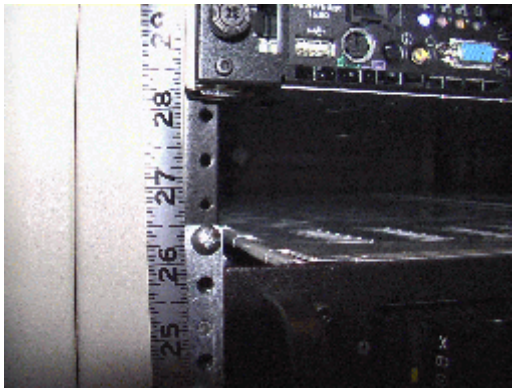

Figure 7

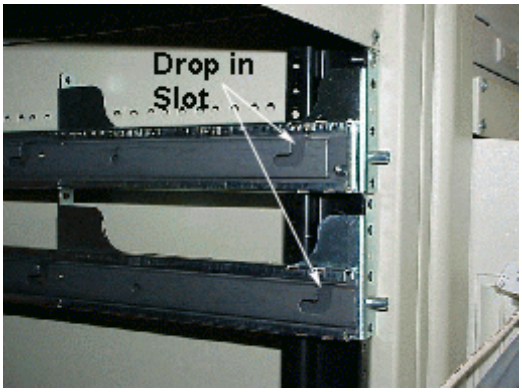

Figure 8

2. Install the new CPSBN2 slide rail kit directly below the CPSBN1 slide rail kit (figure 8).

Figure 9

3. Fully extend the CPSBN2 slide rails insuring that they securely latch in the extended position. Ensure the old CPSBN2 cables run underneath the new CPSBN2 slide rails.

4. Using 2 people, lift the new CPSBN2, and beginning with the rear-most slots, slide the shoulder nuts (on the side of the CP chassis) into the rails slots (figure 10).

5. After all the shoulder nuts are in their appropriate slots and the CPSBN is sitting on the mounting rails, push rearward on the unit to latch it into the rails.

6. Release the rail lock mechanisms by pushing up on the green levers on the outer sides of the slide rails (figure 11), carefully slide the CPSBN chassis into the rack, (cables in rear of rack may obstruct CPs from being pushed fully into the rack), and secure it with the fasteners on the lower corners of the front panel.

7. Repeat Steps 3 through 6 for CPSBN1.

This completes the new CPSBN equipment installation procedure.

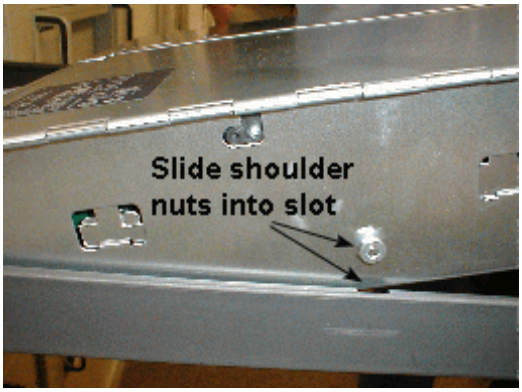

Figure 10

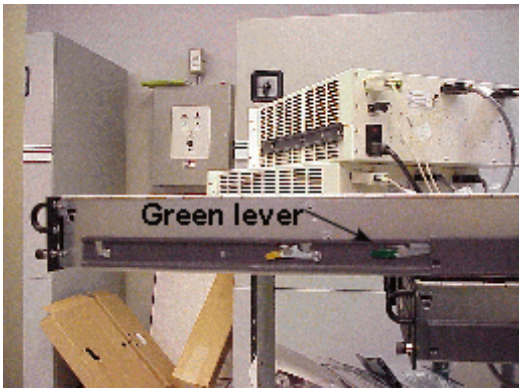

Figure 11

C. High-Speed LAN Equipment Installation Procedure

1. From the back of the DS1 rack, release the power strips from their retaining clips and carefully move them aside for access to the HUB mounting screws. These power strips will not be replaced.

NOTE:	Inform the operations staff that even numbered X-terminals and color graphics printer will be taken off the LAN.

2. Disconnect the LAN cables, monitor and control (M&C) cable from the 12-Port Hub2 (HUB2).

3. Gain access to the power cable by removing the rack panel from the front of the DS1 rack (figure 12). Remove the power cord from HUB2.

Figure 12

4. While one person supports HUB2, remove HUB2 from the rack and set it aside.

5. Install the mounting brackets on both sides of the new 10/100 Switch 2 (figure 13).

6. Before sliding the new 10/100 Switch2 (marked as HSL/SW2 *SID*) into the rack, plug the power cord into the front of the unit.

7. Install the 10/100 Switch 2 in the space vacated by HUB2 and secure it with rack screws from the old HUB2 in the 31st and 33rd hole from the top of the rear vertical mounting rails. Use the rack screws from the old HUB2.

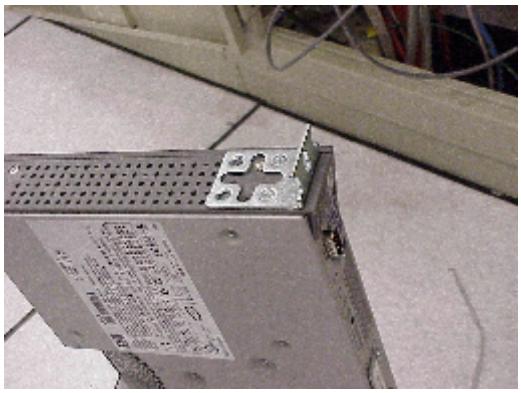

Figure 13

8. Remove the LAN cables from Port 15 on LSW1 and LSW2 and set them aside with the 12-Port Hub.

9. Connect the LAN cables, M&C cable and power cord removed from HUB2 to their designated port on 10/100 Switch2. Remove the Linux workstation LAN cables from LSW2 and plug them into port 12 on the 10/100 Switch2.

10. Re-label the LAN cables removed from HUB2 with the appropriate labels (provided with installation kit) to reflect the new 10/100 Switch designator (more labels are provided than are required). Follow the procedure detailed below:

    a. Place the label on the cable so that cable intersects the label's white and clear part (figure 14).

    b. Fold the clear part up (figure 15) and fold the remaining clear part down over the label's white part (figure16).

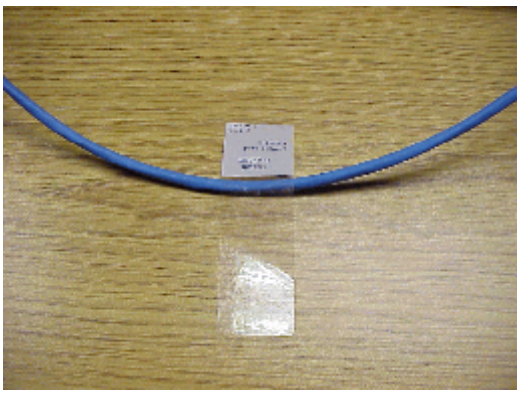

Figure 14

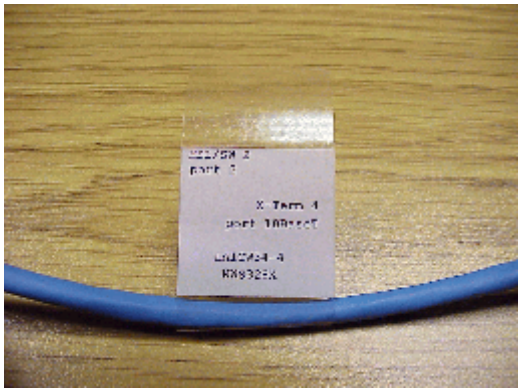

Figure 15

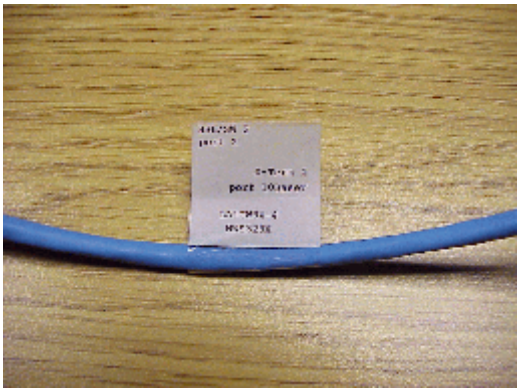

Figure 16

Note: If sites receive only one 100Base-TX card, do not perform steps 11, 12, and 14. Install the LA1AW45 (NWS5114) cable between 10Base-T port 12 on LSW2 and port 24 on 10/100 Switch2.

11. From the back of the DS1 rack, remove the blank cover plate from LSW2 (figure 17). The 100Base-TX card is hot-swapable

12. Put on the ESD strap and install a Waveswitch 100Base-TX module in the open slot in LSW2 using the procedure packaged with the module. If access to the open slot is difficult, remove the LAN cables.

Figure 17

13. Verify that the Spanning Tree Protocol has been enabled on the ProCurve 2524 Switch as follows (password for logging in the Xyplex Console is **`ttrstb1`**):

    a. Set the Xyplex communication's port for Serial (2)/Serial (1), and the Xyplex console is set for EM100 mode by pressing **<user system>** key, **<F8>**, **<F5>**, tab to `Datacom/Ext Dev` press **<F2>** to toggle `Serial (2)/Serial (1)` tab to `Term Mode`, press **<F2>** to toggle `EM100` and press **<F1>** to save configuration.

    b. Press the **<user system>** key, enter user name (if necessary), press 1 to select `console connections`, press 3 to select `LAN Hubs`.

    c. Connect the console to Hub4 and press **<Enter>** twice to return a prompt.

    d. At the `Hub4-<site>#` prompt, type **`show spanning-tree`** then press **<Enter>**.

    e. The top line should read: `STP Enabled : Yes`. If Spanning Tree is not enabled, contact the NCF for assistance.

NOTE: Spanning Tree must be enabled for the switch to function properly on the AWIPS LAN.

    f. Press **<ctrl-c>** to return to the `Hub4-<site>#` prompt then type **`lo,`** press **<Enter>** and answer **`yes`** to the `Do you want to log out` question.

14. Install the LA1AW45 cable (NWS5114) between the newly installed 100Base-TX port on LSW2 and port 24 on 10/100 Switch2.

NOTE: Notify the operations staff to log back in to the even number X-terminals and that the odd number X-terminals and text printer will be taken off the LAN.

15. Disconnect the LAN cables, M&C cable and power cord from 12-Port Hub1 (HUB1).

16. While one person supports HUB1, remove HUB1 from the rack and set it aside.

17. Install the mounting brackets on both sides of the new 10/100 Switch 1 as shown in figure 13.

18. Install the 10/100 Switch1 in the space vacated by HUB1 and secure it with rack screws in the 13th and 15th hole from the top of the rear vertical mounting rails. Use the rack screws from the old HUB1.

19. Remove the LAN cables from Port 14 on LSW1 and LSW2 and set them aside with the

12-Port Hub.

20. Connect the LAN cables, M&C cable and power cord removed from HUB1 to the corresponding port on 10/100 Switch1. Remove the Linux workstation LAN cables from LSW1 and plug them into port 12 on the 10/100 Switch1. High speed switch port assignments for RFCs are referenced in attachment A.

21. Re-label the LAN cables removed from HUB1 with the appropriate labels (provided with installation kit) to reflect the new 10/100 Switch designator (more labels are provided than are required). Follow the labeling procedure outlined in section C step 10a and 10b.

22. From the back of DS1 rack, remove the blank cover plate from LSW1 (figure 17). The 100Base-TX card is hot-swapable.

23. Put on the ESD strap and install a Waveswitch 100Base-TX module in the open slot in LSW1 using the procedure packaged with the module. If access to the open slot is difficult, remove the LAN cables.

24. Verify that the Spanning Tree Protocol has been enabled on the ProCurve 2524 Switch.

    a. Verify the Xyplex communication's port is set for Serial (2)/Serial (1), and the Xyplex console is set for EM100 mode by pressing **<user system>** key, **<F8>**, **<F5>**, tab to `Datacom/Ext Dev` press **<F2>** to toggle `Serial (2)/Serial (1)` tab to `Term Mode`, press **<F2>** to toggle `EM100` and press **<F1>** to save configuration.

    b. Connect the console to Hub3 and press **<Enter>** twice to return a prompt.

    c. At the `Hub3-<site>#` prompt, type **`show spanning-tree`** then press **<Enter>**.

    d. The top line should read: `STP Enabled : Yes.` If Spanning Tree is not enabled, contact the NCF for assistance.

NOTE:	Spanning Tree must be enabled for the switch to function properly on the AWIPS LAN

    e. Press **<ctrl-c>** to return to the `Hub3-<site>#` prompt then type **`lo`**, press **<Enter>** and answer **yes** to the `Do you want to log out` question.

25. Install the LA1AW44 (NWS5114) cable between the newly installed 100Base-TX port on LSW1 and port 24 on 10/100 Switch1.

This completes the high-speed LAN equipment installation procedure.

D. CPSBN to High-Speed LAN and AWIPS Cabling Procedure

NOTE: Reference exhibit 1 on page 18 when completing steps 3 through 12.

1. Stack the 10/100BaseT 4-Port Hubs (SP/SW1 & 2) on the bottom shelf of the SB rack (figure 18).

2. Install the LA1CW110, LA1CW111, LA1CW114 and LA1CW115 cables (NWS5113) between the SB rack and the DS1 rack.

3. Connect the LA1CW110, LA1CW111, LA1CW114 and LA1CW115 cables (NWS5113) to the appropriate ports on the 10/100 switches in the DS1 rack.

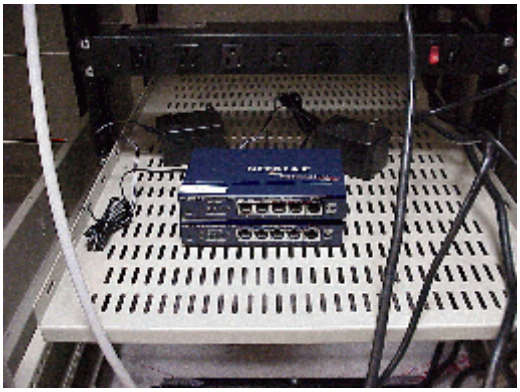

Figure 18

4. Connect the other end of the LA1CW110, LA1CW111, LA1CW114 and LA1CW115 cables (NWS5113) to the appropriate ports on the 10/100 Hubs in the SB rack.

5. In the event the LAN cables from the SP/SW1 & 2, to HUB1 & 2 are mismarked, use the table below for reference.

SB Rack		Cable Number	DS1 Rack	
SP/SW 1	Port 1	W110	HSL/SW 1	Port 19
SP/SW 2	Port 1	W111	HSL/SW 1	Port 20
SP/SW 1	Port 2	W114	HSL/SW 2	Port 19
SP/SW 2	Port 2	W115	HSL/SW 2	Port 20

6. On the back of both new CPSBNs remove the strain relief bracket (figure 19).

7. Locate the “hydra” cable (wire numbers SB1AW3, 4, 5, and 8) and connect the wide high-density connector to the back of the CPSBN2's PTI interface card (figure 20).

10. Connect the other “hydra” cable (wire numbers SB1AW1, 2, 6, and 7) to the wide high-density connector on the back of CPSBN1's PTI interface card.

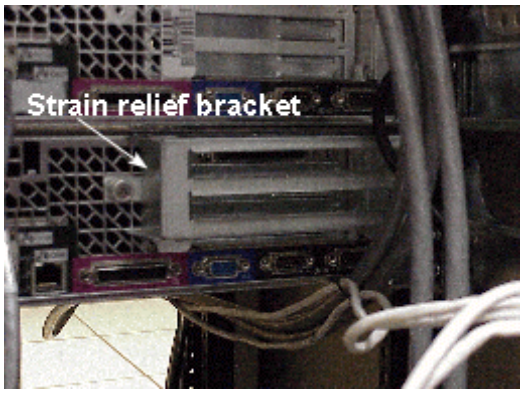

Figure 19

11. Replace the strain relief bracket over the “hydra” cables on both CPSBNs (figure 21).

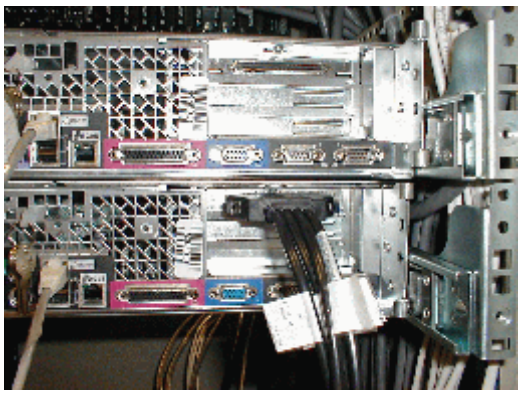

Figure 20

Figure 21

12. Disconnect the M&C cable (DB9), wire number LA1CW10 from the old CPSBN2, and connect it to Serial1 port on the new CPSBN2 (figure 22).

13. Disconnect the M&C cable (DB9), wire number LA1CW9 from the old CPSBN1, and connect it to Serial1 port on the new CPSBN1.

14. Plug SP/SW1 into receptacle three on power strip #2.

15. Plug SP/SW2 into receptacle three on power strip #3.

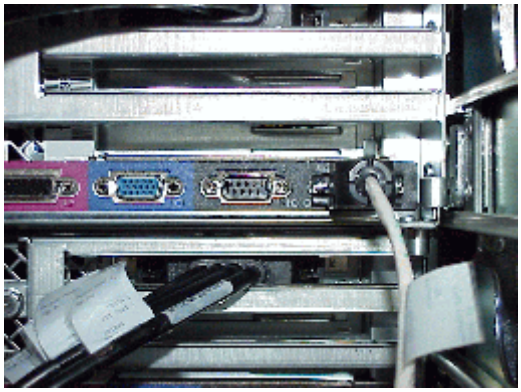

Figure 22

16. Unplug Switch Panel 1 (SwPnl1) from the old power strip and quickly plug it into receptacle six (counting from left to right) of power strip #3. Data loss less than 1 minute.

This completes the CPSBN to high-speed LAN and AWIPS cabling procedure.

E. CPSBN Installation Completion Procedure

1. Contact NCF and ask that the NWSTG channel of the SBN be spared to CPSBN2.

2. Locate and connect the following wires between SwPnl1 and Linux CPSBN1 while removing the connections from the old CPSBN1 to SwPnl1:

   a. Connect wire number SB1AW1 to SwPnl1 Eqpt port A-1.

   b. Connect wire number SB1AW2 to SwPnl1 Eqpt port B-2.

   c. Connect wire number SB1AW6 to SwPnl1 Eqpt port B-3.

   d. Connect wire number SB1AW7 to SwPnl1 Eqpt port A-16 (for future use).

3. Power down and remove the LAN cable from the old CPSBN1.

4. Connect the LA1CW8 cable (NWS5115) between port 4 of SP/SW1 and the 10/100 LAN interface port on CPSBN1 (figure 23).

5. Establish a console connection via the xyplex console.

NOTE: A problem with `/etc/inittab` may not show the login prompt at the console. This is corrected in step 9.

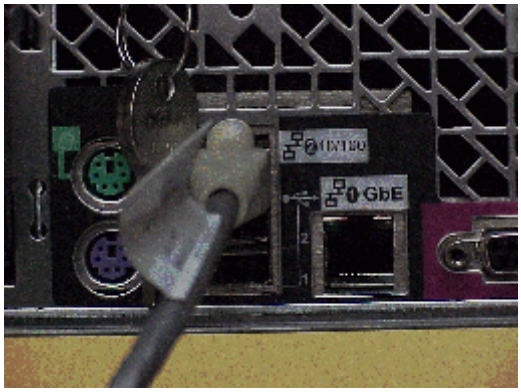

Figure 23

   a. Verify the Xyplex communication's port is set for Serial (2)/Serial (1), and the Xyplex console is set for EM100 mode by pressing **<user system>** key, **<F8>**, **<F5>**, tab to `Datacom/Ext Dev` press **<F2>** to toggle `Serial (2)/Serial (1)` tab to `Term Mode`, press **<F2>** to toggle `EM100` and press **<F1>** to save configuration.

   b. From the menu, select `Com Processors`, press **<Enter>**, select `SBP Downlink 1`, press **<Enter>**.

6. Plug the new CPSBN1 into receptacle one (counting from left to right) of power strip #2.

7. Power up CPSBN1 via the CPs front panel power switch (figure 24) and observe the boot process on the xyplex console.

NOTE: The boot process takes approximately 5 minutes. No user intervention is required.

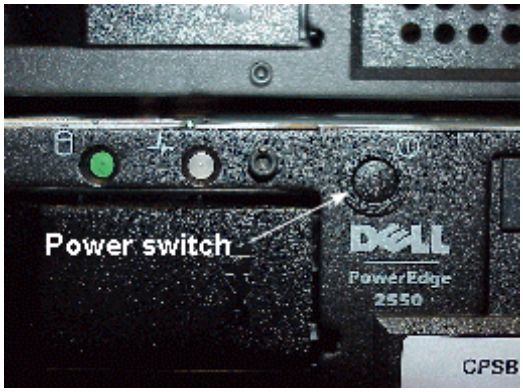

Figure 24

8. Verify the LEDs on the front panel are green.

9. If a login prompt does not appear, copy and initializing the correct inttab file. At a workstation, open a telnet session and log in to the new CPSBN1 as user **root**. Type the following commands:

```
cp -p /etc/inittab /etc/inittab.rh72
cp -p /etc/inittab.bak /etc/inittab
telenit q
```

10. Correct the profile permission problem by typing:

```
chmod a+x /etc/AWIPS
chmod a+x /etc/profile.d/AWIPS.sh
```

11. Copy sbn filter file from the data server to CPSBN1 by typing:

```
rcp –rp /awips/hprt/data/acq_wmo_parms.sbn.radar
cpsbn1:/awips/data/acq_wmo_parms.sbn.radar
acq_setupshm_wmo -p /awips/data/acq_wmo_parms.sbn.radar
```

12. Ensure proper snmpd settings are turned on by typing:

```
/sbin/chkconfig --level 2345 snmpd on
```

13. Verify console access and reboot CPSBN1 to enable ITO and to initialize radar file and profile permissions changes. Perform the following steps:

    a. Verify the Xyplex communication's port is set for Serial (2)/Serial (1), and the Xyplex console is set for EM100 mode by pressing **<user system>** key, **<F8>**, **<F5>**, tab to `Datacom/Ext Dev` press **<F2>** to toggle `Serial (2)/Serial (1)` tab to `Term Mode`, press **<F2>** to toggle `EM100` and press **<F1>** to save configuration.

b. From the menu, select `Com Processors`, press **<Enter>**, select `SBP Downlink 1`, press **<Enter>**.

c. Shut down CPSBN1 by typing:

`shutdown -h now`

The NCF will note the alarm and call the site. If after 5 minutes the NCF does not call, the site should call the NCF.

14. Once NCF has verified receipt of ITO, power cycle the new CPSBN1.

15. Contact NCF and request the SBN's NWSTG and GOES channels be spared to the new CPSBN1. NCF will verify data ingest.

16. Proceed with installing CPSBN2.

17. Locate and connect the following wires between SwPnl1 and Linux CPSBN2 while removing the connections from the old CPSBN1 to SwPnl1:

a. Connect wire number SB1AW1 to SwPnl1 Eqpt port A-2.

b. Connect wire number SB1AW2 to SwPnl1 Eqpt port B-1.

c. Connect wire number SB1AW6 to SwPnl1 Eqpt port A-3.

d. Connect wire number SB1AW7 to SwPnl1 Eqpt port B-16 (for future use).

18. Connect the LA1CW7 cable (NWS5115) between port 4 of SP/SW1 and the 10/100 LAN interface port on CPSBN2 (figure 23).

19. Repeat steps 5 through 14 for CPSBN2. For step 5b and 12b, select `SBP Downlink 2`. In step 6, plug CPSBN2 into receptacle one of power strip #3.

20. Contact NCF and request that NWSTG and GOES channels be placed in their default positions

21. Once NCF has verified ingest of NWSTG and GOES on Linux CPSBN2, NCF will spare the NWSTG channel to CPSBN1 and will leave the GOES channel on CPSBN2.

NOTE:	It is recommended sites change the CPs' password and inform the NCF of the new password.

22. At a workstation, log in to the CPs and ASs, type **date** to verify correct date and time. If the time difference is greater than 3 minutes, perform the following steps:

    a. Ensure the workstation's terminal emulation is set to vt100 by typing:

       `linux export TERM = vt100`

    b. Log in to the CPs as **`root`** using the password **`linuxcp!`**

    c. Type the following commmands:

       `cd /awips/data`
       `linuxconf`

    d. Once the Linux configuration utility appears, arrow down to the date and time option and hit **<Enter>**.

    e. Arrow down to `Hour` and`/or Minute` and change the time.

    f. Press the **<Tab>** key to Accept at the bottom of the screen and hit **<Enter>**.

    g. Press **<Tab>** to Quit at the bottom of the screen and hit **<Enter>**.

    h. Type date to confirm the change.

23. If no problems are observed, cancel all console connections, and exit the Telnet sessions.

24. Back in the equipment room, disconnect and completely remove the data cables, and power cords from the old CPSBN1 and CPSBN2.

25. Remove the old CPSBNs and set them aside.

26. Unplug the remaining devices from the old power strips and plug them into any of the remaining receptacles of one of the new power strips. Completely remove the old power strips.

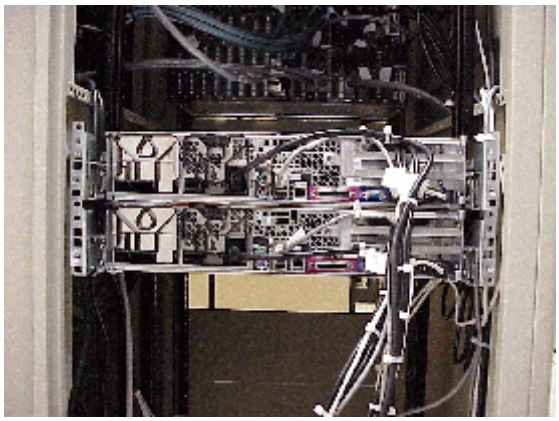

Figure 25

27. "Dress" the CPSBN1 and CPSBN2 cables and power cords in a manner that will allow full and unrestricted extension of the chassis on the slide rails and allow access to the CPSBNs internal components (figure 25 and 26).

28. Install the 7-inch blank panel in the space vacated by the old CPSBN2 chassis.

29. Inform the NCF that the CP installation is complete.

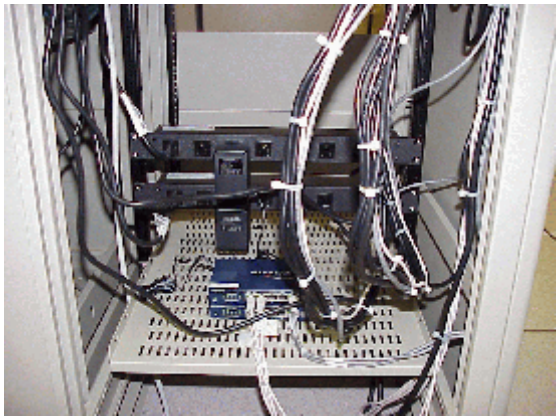

Figure 26

This completes the CPSBN installation procedure.

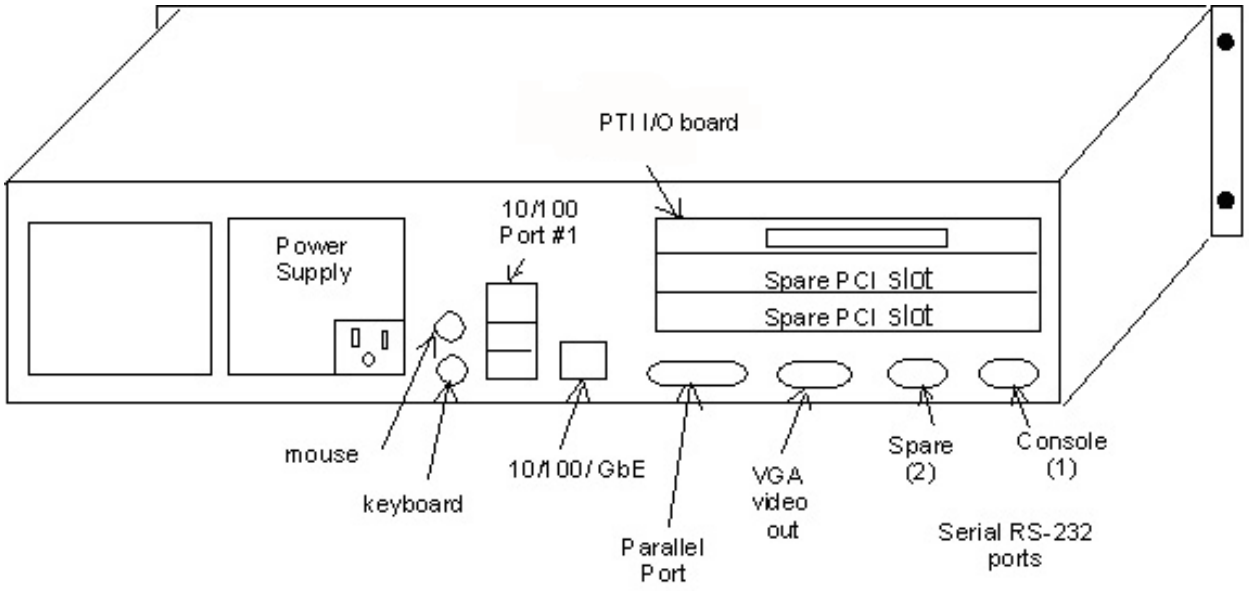

EXHIBIT 1 Linux SBN CP Rear View

MAINTENANCE REPORTING

Report the completed modification using the Engineering Management Reporting System (EMRS) according to the instructions in the NWS Instruction 30-2104, Maintenance Documentation, Part 4, and Appendix H. A sample EMRS report is included as Attachment D. As an additional guide, use the information in the table below.

Block #	Block Type	Information
5	Description	Install two Linux CPs and high speed Local Area Network (LAN) equipment I.A.W. AWIPS Modification Note 4
7	Equipment Code	AWIPS
8	Serial Number	001
15	Comments	Serial number LINUX CP 1: _____ Serial number LINUX CP 2: _____
17a	Mod. No.	4

Mark Paese
Signature Not Verified
Digitally signed by Mark Paese
DN: cn=Mark Paese, o=NOAA/NWS, ou=W/OPS1, c=US
Date: 2002.10.22 05:57:08 -05'00'

Mark Paese
Acting Chief, Maintenance, Logistics, and Acquisition Division

Attachment A - HSL 10/100 Switch Port Assignments
Attachment B - LSW1 and LSW2 Port Assignments
Attachment C - EMRS Report Sample

Attachment A

Port	10/100 Switch1	10/100 Switch2
1	xterm1	xterm2
2	xterm3	xterm4
3	xterm5	xterm6
4	xterm7	xterm8
5	xterm9	xterm10
6	xterm11	xterm12
7		
8		
9		
10	text printer	color printer
11		high-speed printer
12	lx1	lx2
13		
14		
15		
16		
17		
18		
19	linux cpsbn1	linux cpsbn1
20	linux cpsbn2	linux cpsbn2
21	linux px1	linux px1
22	linux px2	linux px2
23		
24	lsw1 100BaseTx	lsw2 100BaseTx

Attachment B

LAN Switch 1 (LSW1)

Port	Device	Notes
1	Phub 1, Port 1	CPSBN1 - LSW Port not used after High-speed LAN upgrade
2	Phub 2, Port 1	CPSBN2 - LSW Port not used after High-speed LAN upgrade
3		
4		
5	WAN Probe	
6	Phub 3, Port 1	CPSYNC1
7	Phub 4, Port 1	CPSYNC2
8	Firewall	
9		
10	Phub 6, Port 1	Router 1
11	Phub 7, Port 1	Router 2
12		
13	CRS	
14	Hub 1, Port 11	Not used after High-speed LAN upgrade
15	Hub 2, Port 11	Not used after High-speed LAN upgrade
16	Hub 3, Port 11	Not used after High-speed LAN upgrade

LAN Switch 2 (LSW2)

Port	Device	Notes
1	Phub 1, Port 2	CPSBN1 - LSW Port not used after High-speed LAN upgrade
2	Phub 2, Port 2	CPSBN2 - LSW Port not used after High-speed LAN upgrade
3		
4		
5		
6	Phub 3, Port 2	CPSYNC1
7	Phub 4, Port 2	CPSYNC2
8		
9		
10	Phub 6, Port 2	Router 1
11	Phub 7, Port 2	Router 2
12		
13	CRS	
14	Hub 1, Port 12	Not used after High-speed LAN upgrade
15	Hub 2, Port 12	Not used after High-speed LAN upgrade
16	Hub 3, Port 12	Not used after High-speed LAN upgrade

EMRS Report

WS FORM A-26 (4/94)

WS FORM A-26 (4/94)

U.S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
NATIONAL WEATHER SERVICE

ENGINEERING MANAGEMENT REPORTING SYSTEM
MAINTENANCE RECORD

Document Number: **G 49978**

General Information

1. Open Date	Time	2. Initials	3. Response Priority (check one)	4. Close Date	Time
4 / 30 / 02	0900	JMM	○ Immediate ○ Low ○ Routine ☒ Not Applicable	4 / 30 / 02	1400

5. Description: **Set up and installation of two AWIPS Linux Communication Processors (CPs) and waveswitch 1216 High Speed LAN upgrade.**

Equipment Information

6. Station ID	7. Equipment Code	8. Serial Number	9. TM	10. AT	11. How Mal.
BOX	AWIPS	001	M	M	999

12. EQUIPMENT OPERATIONAL STATUS TIMES

a. Fully Operational	b. Logistics Delay	Partly Operational c. All Other	d. Logistics Delay	Not Operational e. All Other

13. Parts Failure Information

Block #	a. ASN	b. NSN	c. TM	d. AT	e. How Mal.	f. Qty.	g. Maint. Hrs.
1							
2							
3							
4							
5							

14. Work Load Information

Type	Staff Hrs.
a. Routine	
b. Non-routine	
c. Travel	
d. Misc.	5:00
e. Overtime	

Miscellaneous Information

15. Maintenance Comments: **Installed AWIPS Linux CP and upgraded Waveswitch 1216 LAN equipment I.A.W. AWIPS Mod Note 4.**

16. Initials: **JMM**

17. SPECIAL PURPOSE REPORTING

a. Mod. No.	b. Mod./Act./Deact.Date	c.	d.	e.
4	4/30/02			

18. CONFIGURATION MGMT. REPORTING (use as directed)

ASN	Vendor Part Number (New Part)	Serial Number (Old Part)	Serial Number (New Part)